IN THE UNITED STATES DISTRICT COURT FOR THE
NORTHERN DISTRICT OF OKLAHOMA

W. A. DREW EDMONDSON, in his capacity as ATTORNEY GENERAL OF THE STATE OF OKLAHOMA and OKLAHOMA SECRETARY OF THE ENVIRONMENT C. MILES TOLBERT, in his capacity as the TRUSTEE FOR NATURAL RESOURCES FOR THE STATE OF OKLAHOMA,

Plaintiff,

vs. 4:05-CV-00329-TCK-SAJ

TYSON FOODS, INC., et al,

Defendants.

- -

THE VIDEOTAPED DEPOSITION OF ROGER OLSEN, PhD, produced as a witness on behalf of the Defendants in the above styled and numbered cause, taken on the 2nd day of February, 2008, in the City of Tulsa, County of Tulsa, State of Oklahoma, before me, Lisa A. Steinmeyer, a Certified Shorthand Reporter, duly certified under and by virtue of the laws of the State of Oklahoma.

VIDEOGRAPHER: Thank you. The witness may be sworn.

ROGER OLSEN, PhD,

having first been duly sworn to testify the truth, the whole truth and nothing but the truth, testified as follows:

DIRECT EXAMINATION

BY MR. GEORGE:

Q Mr. Olsen, state your full name for the Record, please. 09:04AM

A Roger Lee Olsen.

Q Could I have a business address?

A It's 1331 17th Street, Suite 1200, Denver, Colorado 80202.

MR. PAGE: Robert, do we have an agreement to reserve objections except as to form? 09:04AM

MR. GEORGE: We do.

MR. PAGE: Thank you.

Q Mr. Olsen, you've been retained in this case to testify on behalf of the Oklahoma Attorney General; is that correct? 09:04AM

A That's correct.

Q Can you state, sir, to a reasonable degree of scientific certainty that Oklahoma's water quality standards for bacteria in all streams and rivers in 09:04AM

wasn't usually, except in the two cases, wastewater component in those, so we're looking for runoff, and we did an experimental design where we had a certain amount of high flow stations in different chicken house density areas because that's the only criteria we had. When we do those correlations both in high flow and base flow, there's a very strong correlation with chicken. 02:29PM

Q Did you do a cattle density analysis?

A That has to do with -- there wouldn't -- I don't think it'd be that direct -- no, I didn't do a specific cattle waste analysis. 02:29PM

Q Well, I'm sorry, I didn't ask about cattle waste. Cattle density?

A Cattle density, it's very small compared to chicken. That's all I know, and that kind of has to do with my weight of evidence, too, why doesn't cattle -- and, again, those chemical signatures in those -- all those runoff samples are a chicken signature. They aren't a cattle signature. I mean it's a weight of evidence. The core is in the lake, you know. There's an increase in concentration of phosphorus with time. There's an increase in zinc. There's an increase of copper with time, and that corresponds to the increase in chicken in the basin. 02:30PM 02:30PM

There is not an increase of cattle in the basin. There's no correlation with the cattle.

Q Is it your testimony that cattle have not increased in the basin over time?

A They increased and then they kind of leveled off. This is an analysis that Bert Fisher has done. That's part of his deposition. So I'm relying on him for that. 02:30PM

Q Okay, but Bert's told you there's not been an increase of cattle in the basin over time; is that right? 02:31PM

A I didn't say that. I said it increased and then leveled off, while the concentrations of P and zinc and arsenic in the sediments continue to go up and the chickens continue to go up. I've seen the graphs, so -- 02:31PM

Q I think we'll talk about those graphs. Let's go back to Exhibit No. 15. On Page 2, sir --

A Yes.

Q -- there's a reference to samples being collected upstream at HS-14, which is referred to as Forest1, and then downstream from that location, which is referred to as Forest1-DN; do you see that? 02:31PM

A Yes.

Q What is the purpose for the high flow station 02:31PM

at Forest1?

A This is a documented application site that is on the stream. So we got a sample both upgradient and downgradient. We've even got a right after storm event, and the upgradient has much lower concentrations of everything than the downgradient. You know, phosphorus goes up tremendously. The other chemical contaminants go up directly, and I mean, the other thing between those two stations that could impact it is the field application. I mean it's a perfect example of demonstrating runoff from a field and chemicals from a land applied field with litter going into the stream. It's right there. 02:32PM

Q Okay. Is the Forest terminology a reference to someone's name; do you know; where does that come from? 02:32PM

A I'd have to check on exactly why they called it Forest1 and Forest1, but it's up and down a chicken field. 02:32PM

Q Do you see down where there's a description of the high flow stations, HFS-14 is referred to as reference?

A Yes.

Q What does that mean? 02:32PM

A We originally thought there was no chickens in that basin, but we started getting data and there was impact with it, and so we looked closer and found this undocumented or we didn't pick it out from the aerials or whatever site, and so we were out there, you know, after a flow event, after a rain event, and so we got a sample upgradient. I told them to get one upgradient and downgradient. It's a perfect application of what we want to show here. 02:33PM

Q So the site that you originally thought would be a control site unimpacted by poultry turned out to be a site that you believe was impacted by poultry; is that right?

A That's right. 02:33PM

Q Okay. How far upgradient and downgradient from HFS-14 were these samples collected?

A I think they were both upgradient.

Q You collected them both upgradient?

A I think so, but I'd have to check for sure. 02:33PM

Q Okay. Well, how far upgradient?

A I don't know. I'd have to check the field note book.

Q You'd have to go to the field notebook to find that information? 02:34PM

A Yes.

MR. GEORGE: Let's change the tape.

VIDEOGRAPHER: We're now off the Record. The time is 2:33 p.m.

(Following a short recess at 2:34 p.m., proceedings continued on the Record at 2:46 p.m.) 02:34PM

VIDEOGRAPHER: We are back on the Record. The time is 2:46 p.m.

Q Mr. Olsen, we were talking about Exhibit No. 15, this paired upstream-downstream sampling? 02:46PM

A Yes.

Q Did CDM conduct an investigation in that small subwatershed to determine if there was cattle present?

A This was a forested area, and that's why it's called forest. I remember that. So based on the aerial photography, we saw little evidence of cattle and chicken until we found this one spread site, but I'd have to check the notebook to see whether there were cattle on that site or not. 02:47PM

Q As we sit here today, do you know whether or not CDM conducted an investigation to determine if there was cattle in proximity to the upstream -- the paired upstream-downstream sampling location described in Exhibit No. 5 -- 15? Sorry. 02:47PM

A I do not know that for sure. Again, the protocol was to record if they saw cattle or not on sites such as that, particularly since those sites were right adjacent to a field.

Q You think that was the protocol, the written protocol? 02:47PM

A I'd have to check the written protocol, but it was the standard protocol to make observations of what you see in the fields.

Q Let me hand you what we'll mark as Exhibit 16. It's another status report from yourself to Mr. Page dated October 9th of 2006; correct? 02:48PM

A Yes.

Q Do you see on the first page there is a reference to try to identify control fields? 02:48PM

A Yes.

Q What's a control field?

A Where there's been no documented application of poultry waste or fertilizer or cows or anything.

Q Do you see the next sentence; could you read that, please? 02:48PM

A CDM has not been able to identify a pasture that has not received fertilizer application.

Q When you use the phrase fertilizer application there, what are you referring to there? 02:48PM

A I was specifically talking to commercial fertilizer on the fields that we had found that didn't have poultry or cows on them. So those is what I was referring to. The few that we found that didn't have waste applied, which there wasn't very many of them, we had to look hard and far to find one that didn't have chicken waste applied on it. The few we found so far in this analysis had commercial fertilizer applied on them and, again, we didn't want that. 02:49PM

Q Okay, and as of October 9th of 2006, how long had you been working in this case?

A We started in November 2004. Our first sampling season was 2005 but, again, we didn't get any soils that year. We couldn't get onto people's property. So we started, if I remember right, actually sampling fields in 2006. I forget the exact timing. 02:49PM

Q So after two years' worth of work on this case approximately, you had not identified a single pasture or property that had not received fertilizer; is that right? 02:50PM

A No. There was a lot that didn't have fertilizer. We were trying to find one that didn't have cow or fertilizer, neither of those. Excuse 02:50PM

me, chicken -- had neither chicken, cow or fertilizer. That was hard to find.

Q How many pasture properties did you identify that had received commercial fertilizer?

A We did not do that analysis. We did that analysis of the commercial fertilizer that's in the basin as part of the mass balance, and it's very small, in the couple percent, if I remember right, versus 80 percent of the chicken phosphorus from the chicken nutrients -- excuse me, chicken waste. 02:50PM

Q Mr. Olsen, the sentence says that you could not identify a pasture property that had not received fertilizer application. That suggests to me that you identified some pasture properties that had received commercial fertilizer; is that true? 02:51PM

A Some of the control sites, the potential control sites that had -- we went to the control site, and that was one of the first things we asked them.

Q How many pasture properties did you identify that had received commercial fertilizer? 02:51PM

A Only two or three.

Q Only two or three?

A That's -- we're just looking at the control sites is all. 02:51PM